

To ensure that applicants are fully responsive to Paper No. 8, applicants provide the following additional comments.

In Paper No. 8, claims 23-30 were rejected under 35 U.S.C. § 112, first paragraph, for allegedly containing subject matter that was not described in the specification in such way as to reasonably convey that applicants had possession of the claimed invention at the time the application was filed. The Examiner contends that the specification fails to identify specific HIV-1ELI epitopes. The Examiner further contends that it fails to perform any type of comparison, wherein specific epitopes from isolate ELI are identified and compared to IIIB-, BRU-, ARV-2, or MAL-specific epitopes. The Examiner also contends that the disclosure fails to provide adequate support for ELI-specific epitopes of 5-150 amino acid residues. Applicants traverse the rejection.

Applicants isolated a novel HIV-1 isolate, HIV-1ELI, and provided its complete nucleotide sequence. (Specification at Fig. 7.) At the time the application was filed, the nucleotide sequences of three HIV-1 viruses were known: HIV-1IIIB, HIV-1BRU, and HIV-1ARV-2. (*Id.* at 2, lines 2-6.) The nucleotide sequence of HIV-1ELI differed from the known HIV-1 viruses to a much greater extent than the sequences of the known viruses differed from each other. (*Id.* at 2, lines 30-35.) Thus, applicants discovered that the heterogeneity of HIV-1 was much greater than that which had been previously appreciated.

Applicants' specification provides a comparison of the amino acid sequences of HIV-1ELI to the Env amino acid sequence of HIV-1BRU, HIV-1ARV-2, and HIV-1MAL. (*Id.* at Figs. 3.) Through this comparison, applicants identified "well conserved stretches". (*Id.* at 23.)

Furthermore, applicants' comparisons in Fig. 3 provide a blueprint of amino acids found in HIV-1ELI that are not present in the sequences of HIV-1BRU, HIV-1ARV-2, or HIV-1MAL at the same positions. Using this blueprint, the skilled artisan is able to generate an enormous genus of HIV-1ELI fragments containing HIV-1ELI-specific epitopes. The specification specifically contemplates such fragments: "the invention also relates to any of the polypeptide fragments . . . bearing an epitope characteristic of a protein or glycoprotein of LAV_{ELI}. . . ." (Specification at 27, lines 19-24.) The specification further refers to such peptides as containing 5-150 amino acids. (*Id.* at 28, lines 4-5.) Thus, the skilled artisan would understand that applicants had possession of the claimed invention at the time the application was filed. Accordingly, applicants respectfully request withdrawal of the rejection.

Applicants respectfully submit that this application is in condition for allowance. In the event that the Examiner disagrees, he is invited to call the undersigned to discuss any outstanding issues remaining in this application in order to expedite prosecution.

If there is any fee due in connection with the filing of this paper, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

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